Big and Little Turkey Lakes, Steuben and LaGrange Counties
Supplemental Walleye Evaluations

Date of Survey: September 26 and October 5, 2010
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Objective: The objectives of these surveys were to evaluate survival of walleyes stocked into Big and Little Turkey lakes in accordance with work plan 300FW1F10D42617.

Methods: Fish collection effort consisted of 2.0 hours and 1.5 hours of pulsed D.C. nighttime electrofishing on Big and Little Turkey lakes respectively. On Big Turkey Lake, 1.25 hours of sampling was conducted on the east shore while 0.75 hours was spent in the outlet bay and west shore. On Little Turkey, approximately 95% of the shoreline was covered. Only walleyes were collected using two dip netters. Walleyes were measured to the nearest 0.1-in total length (TL) and weights were taken to the nearest 0.01 pound.

Summary: The Big Turkey Lake Property Owners Association began stocking advanced walleyes into Big Turkey Lake in the fall of 1998 (Table 1). This privately funded stocking of approximately 2,000 six to nine inch walleyes annually (4.5 per acre) continued through 2006. No stockings occurred in 2007 and 2008 but resumed in 2009.

During the 2010 fall electrofishing survey at Big Turkey, the water temperature was 66° F. Thirteen walleyes were collected. Twelve of these were age-1 fish from the 2009 stocking. They were collected at a rate of 6 per electrofishing hour. These age-1 walleye ranged from 11.7 in TL to 14.3 in TL and averaged 12.8 in TL.

In addition to the 2010 survey, similar fall surveys have been conducted at Big Turkey Lake from 2003 through 2007. Combined, a total of 80 age-1 and 27 age-2 walleyes were collected during these fall surveys (Table 2). The average length and weight of age-1 walleyes was 12.8 in TL and 0.68 pounds while the average length and weight of age-2 walleyes was 15.9 in TL and

1.24 pounds. Walleye growth at Big Turkey is considered good as these averages are greater than five other northern Indiana walleye lakes (Table 3).

A few Big Turkey Lake bass anglers believe that the walleye stocking program is having a negative impact on the bass population. To date, this has not been documented at any of the walleye lakes in Indiana. In fact, the Wisconsin DNR suspects the opposite might be true as largemouth bass populations are slowly replacing walleye in some northwestern Wisconsin waters. Recent studies conducted on Wisconsin lakes suggest that walleye and largemouth bass can have negative interactions and noted that that largemouth bass were the only game fish to become more abundant at the same time that managers noted significant declines in walleye populations, (Wisconsin Department of Natural Resources, June 2010). Fisheries biologists in the Provence of Ontario have similar suspicions. In southern Ontario, the period of decline in walleye abundance at four study lakes corresponds with a significant increase in the abundance of either largemouth or smallmouth bass and the emergence of new species, specifically bluegill and black crappie. (Ontario Ministry of Natural Resources).

The Little Turkey Lake Property Owner's Association funded walleye stockings for Little Turkey from 2005 through 2009. During this time period, between 500 (3.7 per acre) and 1,225 (9.1 per acre) advanced walleye fingerlings were stocked annually. These fish ranged from 5 to 8 in TL (Table 4).

During the Little Turkey Lake 2010 fall survey, 16 walleyes were collected. These fish ranged in length from 11.3 in TL (age-1) to 17.4 in TL (age-4). Nine of these were age-1 fish (6.0 per electrofishing hour) from the 2009 stocking. These age-1 walleyes averaged 12.5 in TL and 0.65 pounds, similar to Big Turkey Lake. The water temperature at the time of the survey was 61° F.

From 2004 through 2008, the Little Turkey Lake walleye stockings occurred at the IDNR access site. This location is also where the outlet from Big Turkey enters Little Turkey. It's possible that newly stocked walleyes ran up this flowing stream channel into Big Turkey. Based on previous angler caught and electrofishing samples of walleyes that were too old to be from the Little Turkey Lake stockings, it's obvious that walleyes move out of Big Turkey into Little

Turkey and the opposite is certainly feasible. In an attempt to address this concern, the 2009 walleye stocking into Little Turkey was moved away from this location. Although this plant was approximately half the number of previous stockings, the electrofishing catch rate was nearly five times higher than previous stockings. One evaluation is not a pattern but does suggest this was an appropriate decision.

Fisheries surveys at six other northern Indiana lakes were conducted to evaluate the survival of advance fall stocked walleyes. These include Crooked, Pretty, Simonton, Sylvan, Wall and Winona lakes. Crooked Lake was stocked with 10 advanced walleyes per acre and the average electrofishing catch rate for age-1 walleyes was 11.5 per hour (Table 5). Simonton Lake has been stocked with an average of 6.1 advanced walleyes per acre. The catch rate for age-1 Simonton Lake walleyes averaged 5.6 per electrofishing hour. Sylvan and Winona lakes were stocked with 20 advanced walleyes per acre through 2008 and 15 per acre in 2009 with average electrofishing catch rates for age-1 walleyes of 20.7 and 12.4 per hour respectively. Relatively low numbers of advanced walleyes were annually stocked at Big and Little Turkey lakes which are reflected in the average catch rate of 3.4 and 3.6 age -1 walleyes per electrofishing hour.

The walleye stocking effort by the local lake associations is providing fishing opportunities at the Turkey lakes and is certainly commendable. Potentially, these opportunities could be significantly improved if the number stocked could be increased. Unfortunately, the Division of Fish and Wildlife (DFW) is not in a position to take over these stockings or assist the lake association with their walleye stocking program at this time.

Recommendations:

To monitor these stockings and provide additional information to the statewide database, the DFW should continue to evaluate survival of fall stocked walleyes when time and manpower is available.

Any future walleye stocking into Little Turkey Lake should be made at the alternate site away from the inlet stream.

Literature Cited:

Peterborough District, Fisheries Management Plan for Fisheries Management Zone 17, November 2009, Ontario Ministry of Natural Resources.

Wisconsin Department of Natural Resources, Sustaining a fishery or fighting a natural change? June 2010, Wisconsin Natural Resources Magazine.

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Table 1. Big Turkey Lake walleye stockings, 1998 through 2010.

Date Stocked	# Stocked	Size (inches)
10/01/98	2,000	6
10/14/99	2,047	7-9
11/12/00	2,000	6-7
11/07/01	2,000	6-7
10/20/02	2,000	6-7
11/01/03	2,100	5-8
10/11/04	2,030	6-8
10/16/05	2,030	6-8
10/15/06	2,025	6-9
2007	None	
2008	None	
10/14/09	2,250	6-8
10/07/10	1,000	6-8

Note: The Big Turkey Lake Property Owners Association purchased these walleye from a private hatchery.

Table 2. Number, length and weight of age-1 and age-2 walleyes collected during fall nighttime D.C. electrofishing from Big Turkey Lake, Steuben County, 1990 through 2010.

Year	Age-1					Age-2				
	Number Collected	Length Range	Average Length	Weight Range	Average Weight	Number Collected	Length Range	Average Length	Weight Range	Average Weight
2003	2	11.9 – 12.0	12.0	0.40 – 0.53	0.51	2	16.5 – 16.6	16.6	1.28 – 1.38	1.33
2004	14	11.2 – 13.4	12.3	0.38 – 0.86	0.63	3	14.7 – 16.2	15.3	0.98 – 1.20	1.07
2005	21	12.2 – 14.3	13.2	0.50 – 0.88	0.74	6	15.4 – 16.6	15.8	0.93 – 1.28	1.18
2006	27	11.3 – 14.3	12.8	0.38 – 1.12	0.65	2	15.8 – 16.1	16.0	1.20 – 1.43	1.32
2007	4	12.5 – 13.4	13.0	0.74 – 0.85	0.80	14	15.3 – 16.5	16.0	1.20 – 1.46	1.27
2009	0					0				
2010	12	11.7 – 14.3	12.8	0.54 – 0.90	0.68	0				
Totals	80	11.2 – 14.3	12.8	0.38 – 1.12	0.68	27	14.7 – 16.6	15.9	0.93 – 1.38	1.24

Table 3. Number and average length in inches of age-0 through age-2 walleye collected during fall gill netting and or nighttime DC electrofishing surveys from six northern Indiana natural lakes, 1977 through 2010.

	Age-0		Age-1		Age-2	
Lake	Number Collected	Average Length	Number Collected	Average Length	Number Collected	Average Length
Bass		6.5		11.3		
B. Turkey	0		80	12.8	27	15.9
Clear	485	7.7	237	11.7	49	15.3
Max	660	7.7	190	11.9	73	14.7
Pretty	141	8.7	130	12.4	61	*15.2
Wall	0		119	12.0	33	14.5

*Average was 16.1 in TL prior to the 2009 sample of 28 age-2 fish.

Table 4. Little Turkey Lake walleye stockings, 2005 through 2010.

Date Stocked	# Stocked	Size (inches)
10/17/05	1,000	6-8
10/03/06	1,000	6-8
10/17/07	1,225	6-8
10/15/08	1,000	6-8
10/14/09	500	5-8
10/07/10	700	6-8

Note: The Little Turkey Lake Property Owners Association purchased these walleye from a private hatchery.

Table 5. Number of age-1 advanced fall stocked walleyes collected per nighttime DC electrofishing hour at Big Turkey, Crooked, Little Turkey, Pretty, Simonton, Sylvan, Wall and Winona lakes, 2001 through 2010.

Lake	Date Stocked	# Stocked	# Stocked Per Acre	Average Size or range (Inches)	# of Age 1 Walleye Collect Per Electrofishing Hour	Year Sampled
Big Turkey (450 ac)						
	10/20/02	2,000	4.4	5-7	0.5	2003
	11/01/03	2,100	4.7	5-8	3.5	2004
	10/11/04	2,030	4.5	6-8	5.3	2005
	10/16/05	2,030	4.5	6-8	6.8	2006
	10/15/06	2,025	4.5	6-9	1.0	2007
	10/14/09	2,250	5.0	6-8	6.0	2010
Average #/hr					3.4	
Crooked (802 ac)						
	9/25/01	7,860	9.8	7.6	16.5	2002
	9/27/02	8,080	10.1	6.9	9.5	2003
	10/03/03	7,881	9.8	6.8	7.0	2004
	10/06/04	8,020	10.0	6.5	15.9	2005
	10/04/05	8,020	10.0	6.5	7.4	2006
	9/28/06	8,070	10.1	6.9	12.9	2007
	10/09/09	8,020	10.0	6-8	9.8	2010
Average #/hr					11.5	
L. Turkey (135 ac)	10/17/07	1,225	9.1	6-8	1.0	2008
	10/15/08	1,000	7.4	6-8	1.5	2009
	10/14/09	500	3.7	6-8	6.0	2010
Average # /hr					3.6	
Pretty Lake (184 ac)	10/07/07	2,280	12.4	8.9	30.7	2008
	10/08/09	1,840	10.0	5.9	11.3	2010
Average # /hr					21.0	

Table 5 continued

Simonton (299 ac)						
	10/24/00	2,000	6.7	5-8	8.5	2001
	10/11/01	2,000	6.7	5-8	3.2	2002
	10/01/02	2,200	7.4	5-8	5.7	2003
	10/21/03	2,000	6.7	5-8	2.4	2004
	10/11/04	2,000	6.7	5-8	8.1	2005
	10/10/05	1,500	5.0	5-8	9.4	2006
	10/4/06	1,220	4.1	6-8	2.1	2007
Average #/hr					5.6	
Sylvan (669 ac)						
	9/25 & 10/03/01	12,620	18.9	6.3	24.3	2002
	10/10 & 10/16/02	13,380	20.0	6.0	13.7	2003
	10/08 & 10/24/03	13,200	19.3	6.0	14.3	2004
	10/08 & 10/12/04	13,380	20.0	7.2	16.1	2005
	10/06 & 10/11/05	13,380	20.0	6.8	34.9	2006
	9/29 & 10/3/06	13,380	20.0	6.7	27.0	2007
	10/08/09	10,035	15.0	6-9	14.3	2010
Average #/hr					20.7	
Wall (141 ac)						
	10/11/.5	1,400	10	5-7	34.0	2006
	10/3/06	1,400	10	5-8	6.7	2007
	10/17/07	1,400	10	6-8	4.7	2008
	2008	None				
	10/08/10	1,410	10	8.5	34.0	2010
Average #/hr					19.8	
Winona (562 ac)						
	9/27/01	10,740	19.1	6.6	9.9	2002
	10/02 & 10/16/02	11,240	20.0	6.3	15.7	2003
	10/01 & 10/03/03	11,300	20.1	7.5	25.4	2004
	10/01 & 10/12/04	11,240	20.0	6.4	1.8	2005
	10/07 & 10/11/05	11,240	20.0	7.3	4.6	2006
	9/26 & 10/3/06	11,240	20.0	7.0	12.0	2007
	10/07/09	8,430	15.0	6-9	17.7	2010
Average #/hr					12.4	